UNITED STATES PATENT AND TRADEMARK OFFICE

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10/696,301	10/29/2003	Wei-Hsing Liu	N1085-00142 [TSMC2002-126	5125

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DUANE MORRIS LLP	CAO, DIEM K	
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SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 October 2003</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-18</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-18</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-18 are presented for examination

Claim Rejections - 35 USC § 101

2.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 9-13 are rejected under 35 U.S.C. 101 because the claimed invention is directed

to non-statutory subject matter. Claims 9-13 are directed to a computer program, i.e., software

per se. They are not claimed as embodied in computer-readable media, and thus are not statutory

because they are not capable of causing functional change in the computer. Such claimed

program does not define any structural and functional interrelationships between the program

and other claimed aspects of the invention which permit the computer program's functionality to

be realized. See MPEP 2106.01 (I).

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing

to particularly point out and distinctly claim the subject matter which applicant regards as the

invention. In claim 2, "the" or "said" should be used instead of "an" in "an input buffer" and "an

output buffer".

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   **Claims 1-4, 7-8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable**

over Fatoohi et al. (Migration of DCE applications into CORBA and SOAP environments)

in view of Chung et al. (DCOM and CORBA Side by Side, Step by Step, and Layer by

Layer).

As to claim 1, Fatoohi teaches a method invoking applications (DCE applications; page

7) associated with a first software environment (DCE; page 7) in a second software environment

(CORBA; page 7) while migrating software applications from the first software environment to

the second software environment (migrating to CORBA; page 7), the method comprising:

- initiating a request message for invoking an application by a client according to a

message bus based architecture (invocation ... is invoked; page 8 and Fig. 3), and

- utilizing an Interface Definition Language (IDL) interface based on the request message

(CORBA stub, CORBA skeleton; page 9 and Fig. 3) for information exchange conforming to the

second software environment (By way of the CORBA .... In the reverse order; page 9).

Fatoohi does not explicitly teach the IDL interface using input and output buffers for

information exchange conforming to the second software environment, wherein the request

message is passed through the input buffer to a predetermined server hosting the application and

reply message data returned therefrom is passed through the output buffer. However, Chung

teaches the IDL interface using input and output buffers (at a client's space, at a server's space;

page 11 and transmit buffer, receive buffer; page 13, right column), wherein the request message

is passed through the input buffer to a predetermined server hosting the application (To send data

... at a client's space; page 11 and ORB consults ... server; page 12, right column) and reply

message data returned therefrom is passed through the output buffer (reply message, transmit

buffer; page 13, right column).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to apply the teaching of Chung to the system of Fatoohi because Fatoohi teaches

CORBA technology offers the legacy application a broad array of new features and services, and

CORBA is more thoroughly object-oriented than DCE (page 4, paragraph 3), and Chung

provides in-depth different layers of CORBA so people who are already familiar with the model

to quickly understand the basic architecture of CORBA (abstract).

As to claim 2, Fatoohi does not teach creating an input buffer for receiving on or more

messages from the client and an output buffer for receiving the reply message data from the

predetermined server. However, Chung teaches creating an input buffer for receiving on or more

messages from the client and an output buffer for receiving the reply message data from the

predetermined server (inherent from the buffers are being used in transferring message from

client to server and back, it is obvious that buffers need to be created prior being utilized by the

application). It would have been obvious to one of ordinary skill in the art that this is another

aspect provided by CORBA, and would be motivated to apply the teaching of Chung to the system of Fatoohi for the same reason above.

As to claim 3, Fatoohi teaches processing the message by the server for invoking the application (the invocation is passed ... the legacy server process; page 9), and returning reply message data associated with the invoked application from the server (return data and out parameters are returned along the same path, in the reverse order; page 9).

Fatoohi does not explicitly teach identifying the server hosting the application, initiating a synchronized communication session with the identified server, the synchronized communication session passing the request message to the identified server. However, Chung teaches identifying the server hosting the application (Upon receiving ... the server; page 12, right column and Upon receiving ... grid; page 15, right column), initiating a synchronized communication session with the identified server, the synchronized communication session passing the request message to the identified server (Upon receiving ... to the skeleton; pages 12-13, right columns).

It would have been obvious to one of ordinary skill in the art that Chung teaches other aspects provided by CORBA, and would be motivated to apply the teaching of Chung to the system of Fatoohi for the same reason above.

As to claim 4, Chung teaches wherein the initiating a synchronized communication session further includes:

- locating a server object to receive the request message (Upon receiving ... the server;

page 12, right column and Upon receiving ... grid; page 15, right column);

- placing the request message in the input buffer (To send data ... at a client's space; page

11 and ORB consults ... server; page 12, right column);

- dispatching the message to the application (Upon receiving ... to the skeleton; pages 12-

13, right columns); and

- placing reply message data in the output buffer when the application responses (reply

message, transmit buffer; page 13, right column).

It would have been obvious to one of ordinary skill in the art that Chung teaches other

aspects provided by CORBA, and would be motivated to apply the teaching of Chung to the

system of Fatoohi for the same reason above.

As to claim 7, Fatoohi teaches the second software environment is a synchronized

communication session based environment (page 17, last paragraph).

As to claim 8, Fatoohi teaches the second software environment is a CORBA

environment (page 17, last paragraph).

As to claim 14, see rejections of claims 1-5 and 8 above. Chung further teaches

marshaling the message into a message object (marshaling packs a method calls parameters at a

client's space; page 11), marshaling the reply message data in the output buffer by an IDL

skeleton into one or more reply message objects (marshaling parks return values at a server's

space into a standard format for transmission; page 11), unmarshaling the reply message objects

(the proxy then unmarshals the return values; page 13, right column), and conveying the unmarshaled reply message data to the client (and returns them to the client; page 13, right column).

6.   **Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fatoohi et al. (Migration of DCE applications into CORBA and SOAP environments) in view of Chung et al. (DCOM and CORBA Side by Side, Step by Step, and Layer by Layer) further in view of Konstantas (Migration of legacy applications to a CORBA platform: a case study).**

As to claim 5, Fatoohi and Chung do not teach placing reply message data further includes accumulating the reply message data in a reply buffer before copying same to the output buffer. However, Konstantas teaches placing reply message data further includes accumulating the reply message data in a reply buffer before copying same to the output buffer (page 9 and Fig. 6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teaching of Konstantas to the system of Fatoohi and Chung because it allow continuous availability of the information system, minimal manpower for the implementation and preservation of the autonomy of the independent information systems (abstract).

7.   **Claims 6, 9-13 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fatoohi et al. (Migration of DCE applications into CORBA and SOAP environments)**

in view of Chung et al. (DCOM and CORBA Side by Side, Step by Step, and Layer by Layer) further in view of APA (Admitted Prior Art).

As to claim 6, Fatoohi does not teach the first software environment is TIBCO RV environment. APA teaches TIBCO RV environment is one type of legacy system (page 5, paragraph 18). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Fatoohi and APA because Fatoohi teaches migration legacy application to CORBA will offer the legacy application a broad array of new features and services, and CORBA is more thoroughly object-oriented than DCE (page 4, paragraph 3).

As to claim 9, see rejections of claims 1, 6 and 8 above.

As to claims 10-13, see rejections of claims 2-5 above.

As to claim 15, Fatoohi teaches a method for operating applications while migrating software applications from a first software environment to a CORBA software environment, the method comprising:

- receiving a request message from a client for operating an application, the request message conforming to the first protocol (invocation ... is invoked; page 8 and Fig. 3);

- marshaling the message into a message object through a universal application invoking Interface Definition Language (IDL) stub (The CORBA stubs are used to convert function calls

and returns to IIOP; page 7 and Fig. 3);

 - receiving reply message data from the application (a legacy server ... in the reverse

order; page 9); and

 - sending the reply message to the client (return data and out parameters are ... order;

page 9).

 Fatoohi does not explicitly teach conducting a communication session with a CORBA

object request broker for locating a server object to identify the application for processing the

message object, and TIBCO software environment. However, Chung teaches conducting a

communication session with a CORBA object request broker for locating a server object to

identify the application for processing the message object (Upon receiving ... the server; page

12, right column and Upon receiving ... grid; page 15, right column). APA teaches TIBCO RV

environment is one type of legacy system (page 5, paragraph 18).

 It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the teaching of Fatoohi, Chung and APA because migration legacy

application to CORBA will offer the legacy application a broad array of new features and

services, and CORBA is more thoroughly object-oriented than DCE (page 4, paragraph 3)

 As to claim 16, see rejections of claims 2, 4 and 5.

 As to claim 17, Chung teaches wherein the conducting further includes:

 - marshaling the reply message data into one or more reply message objects (marshaling

parks return values at a server's space into a standard format for transmission; page 11 and

marshal the return values and returns from the skeleton method; page 13, right column), and

- sending the marshaled reply message objects from an IDL skeleton to the CORBA

object request broker (The ORB builds ... buffer; page 13, right column).

It would have been obvious to one of ordinary skill in the art that Chung teaches other

aspects provided by CORBA, and would be motivated to apply the teaching of Chung to the

system of Fatoohi for the same reason above.

As to claim 18, Chung teaches

- unmarshaling the reply message objects by the IDL stub (the proxy then unmarshals the

return values; page 13, right column); and

- conveying the unmarshaled reply message data to the client (and returns them to the

client; page 13, right column).

It would have been obvious to one of ordinary skill in the art that Chung teaches other

aspects provided by CORBA, and would be motivated to apply the teaching of Chung to the

system of Fatoohi for the same reason above.

Conclusion

8.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. See PTO - 892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diem K. Cao whose telephone number is (571) 272-3760. The examiner can normally be reached on Monday - Friday, 7:30AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Thomson can be reached on (571) 272-3718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DC
March 2, 2007

TUAN DAM
SUPERVISORY PATENT EXAMINER